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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,285	07/08/2003	Ajit Shankaranarayanan	GEMS8081.175	1284
27061	7590	01/03/2006		
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS) 14135 NORTH CEDARBURG ROAD MEQUON, WI 53097			EXAMINER HORWAT, JENNIFER A	
			ART UNIT 3737	PAPER NUMBER

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/604,285	<b>Applicant(s)</b> SHANKARANARAYANAN ET AL.	
	<b>Examiner</b> Jennifer Horwat	<b>Art Unit</b> 3737	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                                     |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                         | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                                | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/8/03 7/15/03</u> . | 6) <input checked="" type="checkbox"/> Other: <u>additional IDS 6/6/2005</u> .          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statements filed on 7/8/2003, 7/15/2003, and 6/6/2005 are in compliance with 37 CFR 1.97-1.98 and all references therein have been considered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7, 9-12, 14-20, and 22 rejected under 35 U.S.C. 102(e) as being anticipated by Machida (US 2002/0115929). Machida discloses all of the limitations in the above-mentioned claims in a magnetic resonance imaging system for slice selective excitation in which the patient support table translates (figure 1, element 17 and paragraph 5) continuously through the system. The system has a plurality of gradient coils (figure 1), an RF transceiver (figure 1, elements 8R and 8T) to acquire MR images, and a computer (figure 1, element 6). A preparation pulse may be employed (paragraph 103) which is applied to the slice to selectively excite the region of interest

one slice at a time. The preparatory excitation pulse is repeated before each of the slices is translated one slice thickness (figures 4a-4d). The excited slice has the same width as the fixed imaging slice (figures 4a-4d) and the subject is translated continuously through the imaging volume so that each slice is selectively excited and then imaged as it is translated. The preparation pulse is offset as a function of translation direction and is offset in the direction opposite that of translation, inherent in the fact that the preparation pulse is applied prior to imaging and that the RF pulse is offset by a value depending on movement of the object, the gyromagnetic ration, the strength of the gradient pulse, speed of the table top, and the repetition time (paragraphs 6-9). The preparation interval is changed by the computer as a function of the above-mentioned variables according to the formula given in paragraph 7. User input provides the host computer with desired imaging conditions, pulse sequence, among other functions (paragraph 50). A gradient echo sequence may be used (paragraph 88), such as an echo planar imaging system sequence. The computer provided, including a sequencer, a calculator, storage, and a display, and an input unit (paragraph 45) allows the calculations and method steps previously described to be calculated and executed.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 13, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machida in view of Maier, et al (US 2001/0045830). Machida, as discussed above, substantially discloses the invention as claimed, however fails to disclose specifically using an inversion recovery pulse as the preparation RF pulse, which will have a flip angle of 180 degrees. A variety of pulses are well known in the medical imaging field and it is common to use an inversion pulse to reset or restore the state of the system. Maier discloses using a 180 degree inversion pulse as a preparation pulse (paragraph 52) in which the column to be inverted is always spaced ahead of the column to be excited. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Machida with the teachings of the reference by Maier, as Maier discloses methods to reduce artifacts due to motion or inhomogeneities (paragraph 3) which would be advantageous in a system using continuous motion.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Horwat whose telephone number is (571) 272-2811. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jah  
12/12/2005

  
ELENI MANTIS-MERCADER  
PRIMARY EXAMINER